

2009 HAI Comparison Summary Report
Standardized Infection Ratio (SIR) for all Hospitals Reporting
(December 2008 –November 2009)

(See the discussion at the end of this report.)

SIR Interpretation:

Statistically Lower than the Standard Population

Statistically Not Different from the Standard Population

Statistically Higher than the Standard Population

***Comments: (number of hospitals not included because of small number of procedures or central lines)**

- Small number of surgical procedures of twenty (20) or fewer is not reported to protect confidentiality.

- Small number of Central Lines of fifty (50) or fewer is not reported to protect confidentiality.

These hospitals are not included in the percentages, but are included in the total number of hospitals performing those procedures. Reports are preliminary until the 30 day follow-up period for case finding or one year if implants were used.

Surgical Site Infections (SSIs) Summary SIR Reports

Procedure	Hospitals Performing Procedures	Number of hospitals not included in SIR columns due to small numbers	Total Infections	Total Procedures	SIR Lower	SIR Not Different	SIR Higher
	#	#	#	#	# of Hospitals (%)	# of Hospitals (%)	# of Hospitals (%)
Coronary Artery Bypass Graft (Chest and Donor Incision)	16	0	80	3814	2 (12.5)	14 (87.5)	0 (0)
Coronary Artery Bypass Graft (Chest Incision only)	13	7	1	321	0 (0)	6 (100)	0 (0)
Hip Prosthesis – Replacement	54	13	104	5971	0 (0)	37 (90)	4 (10)
Knee Prosthesis –Replacement	54	9	75	9009	1 (2.2)	42 (93.3)	2 (4.4)
Hysterectomy (abdominal)	52	13	99	5376	0 (0)	35 (90)	4 (10)
Hysterectomy (vaginal)	48	16	25	2653	0 (0)	31 (97)	1 (3)
Cholecystectomy (Gallbladder)	61	9	41	10080	0 (0)	52 (100)	0 (0)
Colon Surgery (only hospitals with ≤ 200 beds)	31	13	48	925	1 (5.6)	14 (77.8)	3 (16.7)
Spinal Fusions	28	4	43	4151	1 (4.2)	22 (91.7)	1(4.2)

Central Line Associated Blood Stream Infections (CLABSI) SIR Summary Report

Central Line Locations	Hospitals Monitoring Location	Hospitals not included in the SIR and Total Infections column due to small numbers	Total Infections	Total Central Line Days	SIR Lower	SIR Not Different	SIR Higher
	#	#	#	#	# of Hospitals (%)	# of Hospitals (%)	# of Hospitals (%)
Medical- Surgical Critical Care Units	41	2	106	52082	1 (3)	36 (92)	2 (5)
Medical Critical Care Unit	11	0	41	18535	0(0)	10 (91)	1 (9)
Surgical Critical Care Unit	3	0	6	3385	0 (0)	3 (100)	0 (0)
Medical Surgical Pediatric Critical Care Unit	4	0	15	3132	0 (0)	4 (100)	0 (0)
Medical Pediatric Critical Care Unit	1	0	2	1250	0 (0)	1 (100)	0 (0)
Inpatient Wards (Hospitals \leq 200 beds or less)	42	6	32	37297	0 (0)	36 (100)	0 (0)
Rehabilitation Wards	17	4	11	8855	0 (0)	13 (100)	0 (0)
Long Term Acute Care (LTAC)							
Temporary Central Line	6	0	99	39129	1 (17)	2 (33)	3 (50)
Permanent Central Line	3	0	4	1774	0 (0)	3 (100)	0 (0)

Discussion of HAI Comparison Summary Report Report:

This discussion summarizes the findings in the HAI Comparison Summary Report. The SSI and CLABSI Comparison reports, also found in Appendix D and on the HIDA HAI website (www.scdhec.gov/hai), provide the hospital specific data used to create the summary tables. Each hospital's data is compared to the national standard population of hospitals entering HAI data into the National Healthcare Safety Network (NHSN) data base.

The Standardized Infection Ratio (SIR) is a summary measure used to compare the central line associated bloodstream infection (CLABSI) experience among a group of reported locations or the Surgical Site Infection (SSI) experience among a group of reported procedures to that of a standard population. It is the *observed* number of infections divided by the *expected* (predicted) number of infections. For HAI reports, the standard population comes from CDC NHSN data reported from all hospitals using the system in the United States. "Expected"* is based on historical data for those procedures at the national level.

The SIR for the national standard population SIRs were calculated using the CDC NHSN report published in December 2009, which is based upon data entered into NHSN from 2006 through 2008. (1) Each hospital's SIRs are compared with the national standard population. The December 2009 NHSN report included an additional year's worth of data than the previous November 2008 report.

The additional year of data in this year's report has changed the standard population in several ways. Mandatory reporting has dramatically increased the number of participating hospitals from about 400 to over 2,000 and NHSN opened enrollment to include small hospitals increasing the amount of information entered which in turn can increase or decrease rates. There have been many changes in risk categories for many procedures and these have had an impact on the infection rates. DHEC will continue to work with CDC to identify how to interpret these changes and to how to use the changing data base to evaluate trends and measure progress. Hospitals should use the SIR data and their own data reports to guide prevention efforts.

In this **2009 Hospital Comparison Summary** (SC data entered December 2008 – November 2009), the data includes reports from seventy-nine acute care and rehabilitation hospitals. Some of the hospitals had numbers too small to include in the standardized infection ratio (SIR) reports. The majority of South Carolina hospitals with numbers large enough to publish were statistically "not different" from the SIR in the standard national population in all categories. For the nine surgical procedures, a total of five SIRs were "lower" (better) than the national standard population, and 253 SIRs were "not different", and fifteen SIRs were "higher". For the eight CLABSI locations, two SIR were lower than the national standard, and 108 SIRs were not different, and six SIRs were higher.

Surgical Procedures:

For the coronary artery bypass graft (chest and donor incision), two hospitals (12.5%) of the sixteen hospitals performing these procedures had lower (better) SIRs; fourteen hospitals (87.5%) were not different than the standard SIR; and none were higher. For coronary artery bypass graft (chest incision only) all six hospitals performing these procedures were not different than the standard.

For the other procedures:

- Hip replacements, none were lower, 37 SIRS were not different, and 4 were higher.
- Knee replacement, one was lower, 42 were not different, and 2 were higher.
- Hysterectomy (abdominal), none were lower, 35 were not different, and 4 were higher.
- Hysterectomy (vaginal), none were lower, 31 were not different, and one was higher.
- Gallbladder surgery, none were lower, 52 were not different, and none were higher.
- Colon surgery, one was lower, 14 were not different, and 3 were higher.
- Spinal Fusions, one was lower, 22 were not different, and one was higher.

Central Line Associated Bloodstream Infections: For this reporting period, all hospitals with medical and medical/surgical critical care locations must report; and hospitals with 200 beds or less must also report on inpatient locations outside critical care.

- Critical care locations reporting central line infections: one critical care unit reported a lower SIR, 54 were not different, and three were higher than the standard.
- Locations outside critical care: one reported a lower SIR, 51 were not different, and none were higher than the standard
- All SIRs in Rehabilitation hospital were not different than the standard.
- Long Term Acute Care Hospitals (LTACs)
 - Temporary Central Line: one hospital was lower, two hospitals were not different and three were higher than the standard.
 - Permanent Central Line: All SIRs with a permanent central line in LTACs were not different than the standard.

References:

1. Edwards, Jonathan, et. al., “National Healthcare Safety Network (NHSN) report: Data summary for 2006 through 2008, issued December 2009”, Am J Infect Control 2009;37:783-805.
<http://www.cdc.gov/nhsn/PDFs/dataStat/2009NHSNReport.PDF>
2. DHEC HIDA Reports: www.scdhec.gov/hai